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09/986,058	11/07/2001	Michael E. Bell	11-908	4839

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NIXON & VANDERHYE P.C.  
8th Floor  
1100 North Glebe Rd.  
Arlington, VA 22201-4714

EXAMINER

JUSKA, CHERYL ANN

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 06/25/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/986,058

Applicant(s)

BELL, MICHAEL E.

Examiner

Cheryl Juska

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 15-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-12 and 15-19, drawn to a method of recycling waste carpet, classified in class 264, subclass various.
  - II. Claims 13 and 14, drawn to a carpet, classified in class 428, subclass 95.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions of Group I and Group II are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the method can be employed to make a material other than a carpet, such as an awning, road surface, roofing material, or tarp. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Richard Besha on June 19, 2003, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-12 and 15-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13 and 14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-12 and 15-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 1 is indefinite for the use of the phrase "using the composite, making a useful product." The scope of the claim is unclear because the metes and bounds of 'using' are unknown. Claims 2-12 and 15-19 are rejected for their dependency on claim 1.

7. Claim 1 is indefinite because it is unclear if the second material is additional resin added to the waste carpet material or if it is a substrate (i.e., a tufted primary backing) to which the melted first material is applied (i.e., as a backcoat). In the latter case, claim 6 would also be indefinite since the composite material would comprise the tufted primary backing and the backcoat, thus it would not be desirable to melt said composite material to the claimed viscosity range.

8. Claim 7 is indefinite for it is unclear if the calcium carbonate filler is part of the composite material (i.e., first material comprising filler and thermoplastic resin) or if it is in addition to said composite material.

9. Claim 12 is indefinite for the use of the phrase "making new carpeting with the first and second materials and fiberglass." The second material is already stated to be fiberglass. Thus, it is unclear what the difference between said "second material" and "fiberglass" of said phrase is.

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Applicant claims a method of recycling waste carpet comprising the steps of:

- (a) collecting said waste carpet,
- (b) processing said waste carpet to provide a first material containing a filler and a thermoplastic resin,
- (c) adding said first material to a second material to provide a composite material,
- (d) making a useful product from said composite material.

The method may also include reducing the first material to a size in the range of 50-100 to 95-325, preferably 78-200. (The No. 100 screen size corresponds to a particle size of 150 microns, while the No. 325 screen size corresponds to a particle size of 45 microns.) Said reducing step may include grinding. The first material is preferably heated to a temperature to enable it to flow onto said second material and bond thereto. The filler is preferably calcium carbonate. The useful product may be a thermoplastic or a thermoset product and is preferably a PVC product.

The step of adding the first material to a second material is preferably to produce a carpet backcoat comprising 3-30% EVA copolymer, 15-65% resin, and 30-70% filler, wherein said filler comprises calcium carbonate and the composite material. The method includes processing the composite material into a molten form having a viscosity of 10,000-30,000 CPS. The useful

Art Unit: 1771

product may be a latex, EVA, or PVC carpet backcoat for a new carpet. In one embodiment, the second material is fiberglass and a new carpet is made from the composite material. In another embodiment, the waste carpet contains calcium carbonate and at least one of a thermoplastic resin, nylon, and caprolactam. In particular, the waste carpet contains 50-70% calcium carbonate, 0-45% thermoplastic resin, 0-45% nylon, and 0-8% caprolactam.

12. Claims 1, 5, 8, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 60-206868 issued to Moryama et al.

Moryama discloses a method of recycling waste carpet comprising the steps of collecting waste carpet materials, grinding said carpet to small chips, mixing said chips with additional synthetic resin, and extruding said mixture onto a new carpet as a backcoat material (abstract and English translation, page 2, lines 5-18 and page 5, lines 17-31). The waste carpet comprises thermoplastic face yarns as carpet pile, such as nylon yarns (translation, page 4, lines 4-6). The primary and secondary backings of said waste carpet are also made from thermoplastic resins, such as polyester and polyethylene (translation, page 4, lines 6-9).

The additional synthetic resin containing the carpet chips may be one or more of polyethylene, ethylene vinyl acetate (EVA), or ethylene-methacrylic acid copolymer (translation, page 4, lines 21-26). In one example, the chips are added to the additional synthetic resin in an amount of 35% (translation, 23-24). The chips and the additional synthetic resin are heated to a temperature sufficient to melt the resin of the waste carpet and the additional synthetic resin, but below the temperature of the nylon face fibers (translation, page 5, lines 4-14). Thus, the nylon face fibers act as a filler component in the backcoating. Therefore, claims 1, 5, 8, 10, and 11 are rejected as being anticipated by the cited Moryama reference.

Art Unit: 1771

13. Claims 1-5, 8-12, 15-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 99/40250 issued to Chen et al.

Chen discloses a backing layer for a carpet that comprises a fused recycled thermoplastic material from waste carpet (abstract and page 3, lines 6-11). The backing layer may be up to 100% recycled material (page 1, lines 21-22) and is made preferably from post-consumer carpet waste (page 4, lines 5-10). The waste carpet is reduced to chunks or granules by a shredder and then processed in a granulator to densify and further reduce the size (page 5, lines 19-21 and page 6, lines 3-15). The granules are then further reduced to form a powder by means of a cryogenic grinder (page 7, lines 1-8). The particle size of the powder is preferably 5-1,000 microns (page 18, claim 9). Preferably, as least 75% of the face fibers are removed from the waste carpet by a shearing process before shredding and then by removal with an aspirator before the grinding step (page 5, line 22-page 6, line 2 and page 6, lines 20-28).

The recycled powder typically comprises a thermoplastic material, such as the vinyl-based backcoat of the waste carpet, a plasticizer, an inorganic filler, a stabilizer (page 7, lines 16-20). The powder may be used alone or mixed with virgin thermoplastic resin, such as polyvinyl chloride, in an amount ranging from 1-100% recycled material (page 7, lines 21-28 and page 10, lines 19-21). To the powder-resin mixture other ingredients, such as inorganic fillers, plasticizers, blowing agents, etc., may be added (page 8, lines 6-9). Therefore, claims 1-5, 8-12, 15-17, and 19 are rejected as being anticipated by the cited Chen reference.

Art Unit: 1771

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2-4, 7, 9, 12, and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Moryama reference in view of the cited Chen reference.

Moryama does not teach the presently claimed first material (i.e., carpet waste) size. However, as noted above, Chen teaches a particle size of 5-1000 microns. It would have been obvious to one skilled in the art to grind the waste carpet particles to the size taught by Chen in order to produce a uniform resin blend. Therefore, claims 2 and 3 are rejected.

Moryama does not explicitly teach the claimed PVC product. However, as noted above Chen teaches a similar process and product wherein said product is a PVC product. Thus, claim 9 would have been obvious since the choice of additional resin and/or waste carpet composition and, hence, the resultant product composition are within the ordinary skill of one in the art and since Chen teaches said PVC products are known. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Additionally, Moryama does not explicitly teach the claimed fiberglass carpet substrate. However, said fiberglass substrates are well known in the art of carpets as suitable materials for reinforcement of said carpet. For example, Chen teaches the use of a fiberglass reinforcement



Art Unit: 1771

layer (page 10, lines 8-13). Therefore, it would have been obvious to one skilled in the art to employ a fiberglass layer in the Moryama carpet as a reinforcement layer.

Furthermore, Moryama does not teach the presence of calcium carbonate filler in the waste carpet. However, said filler is very well known in the carpet art. For example, Chen teaches the use of inorganic fillers, such as calcium carbonate, as part of the waste carpet and as part of an additive to the backcoat (page 7, lines 16-19, page 8, lines 4-9, and page 15, lines 11 and 17). Thus, it would be obvious to one skilled in the art to employ calcium carbonate filler as is known in the art to reduce manufacture cost of backcoat materials and to reduce the carpet weight.

With respect to claims 7 and 18, Moryama does not explicitly teach the claimed backcoat composition. However, it is asserted that said claims are obvious over the cited prior art of Moryama and Chen. First, it is noted that the backcoat composition is partially dependent upon the composition of said waste carpet, such as the amount of nylon face fibers and the amount of resin and filler in the waste carpet. Thus, it would be obvious to one skilled in the art to balance the amount of additional resin and additional filler, if desired, to the waste carpet particles in order to obtain a suitable backcoat composition. The choice of carpet backcoat resins and the proper amounts are within the ordinary skill of one in the art. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Additionally, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Art Unit: 1771

16. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Chen patent.

Although Chen does not explicitly teach the limitations of claims 7 and 18, Chen does teach a backcoat composition comprising the range of filler, waste carpet, and resin. Chen lacks a teaching that the resin composition is 3-30% EVA copolymer and 15-65% other resin. However, it is asserted that this composition is obvious over Chen, since the choice of carpet backcoat resins and the proper amounts are within the ordinary skill of one in the art. It has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. Additionally, it has been held that discovering an optimum value of result effective variables, such as the composition amounts, requires only routine skill in the art. *In re Boesch*, 205 USPQ 215. Therefore, claims 7 and 18 are rejected as being obvious over the cited prior art.

17. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the cited Moryama reference or the cited Chen reference.

Neither Morayama nor Chen explicitly teach the claimed viscosity of the waste carpet and resin mixture. However, it would have been obvious to one skilled in the art to adjust the composition and/or process temperature to obtain the desired viscosity. A higher viscosity would increase the amount of penetration of said backcoat into the tufted primary backing, while a lower viscosity would decrease said amount of penetration. It has been held that discovering an optimum value of result effective variables, such as the composition amounts, requires only routine skill in the art. *In re Boesch*, 205 USPQ 215. Thus, claim 6 is rejected.

Art Unit: 1771

*Conclusion*

18. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Cheryl Juska whose telephone number is 703-305-4472. The Examiner can normally be reached on Monday-Friday 10am-6pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Terrel Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



CHERYL A. JUSKA  
PRIMARY EXAMINER